

SERVICE MANUAL

centuri_{INC.}

**MANUAL NO.
382-10-0200**

LOCO - MOTION

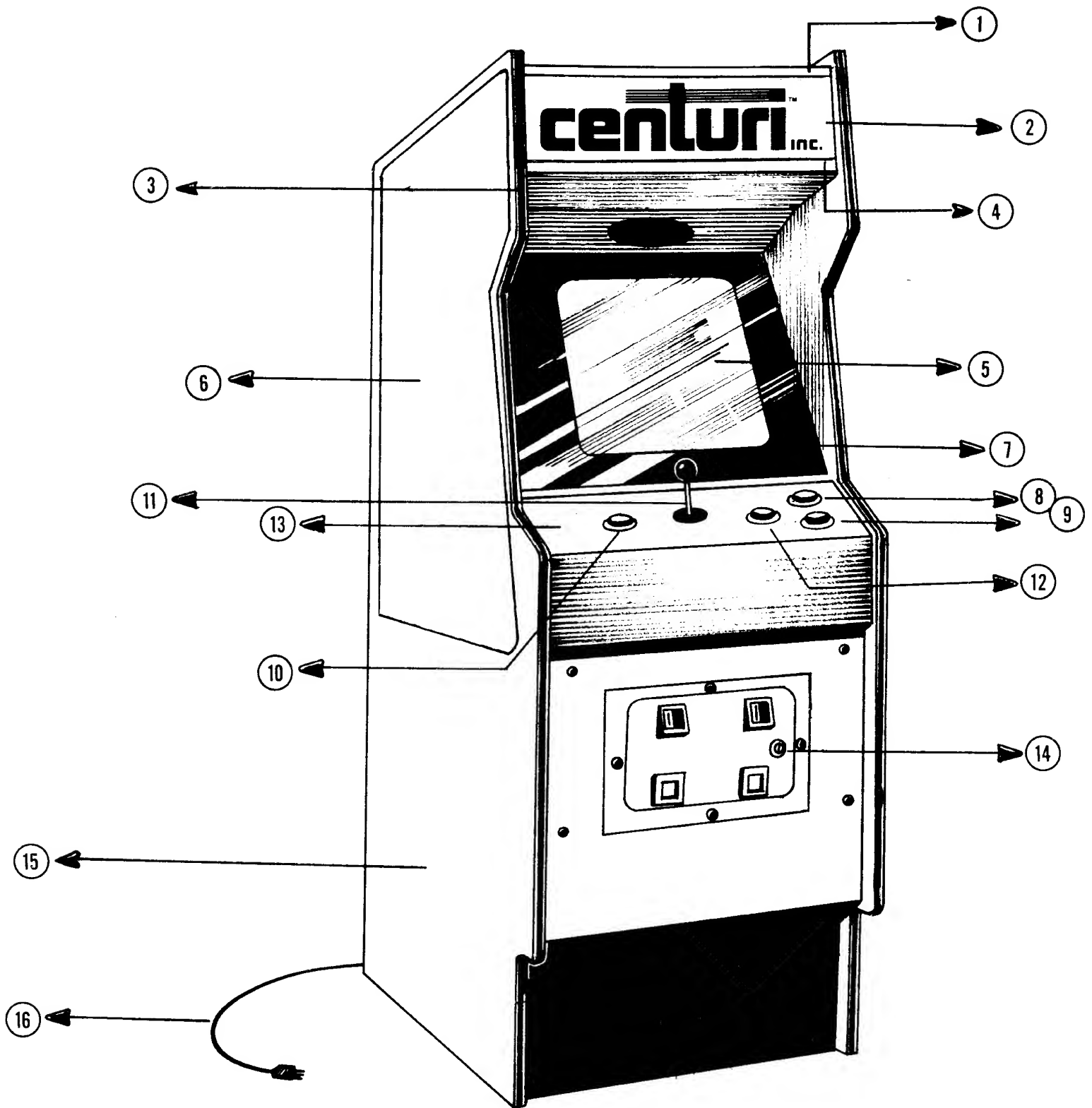
CENTURI, INC.
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TELEX: 803694 ANSB CENTURI CABLE: CENTURI

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(FIG, 1)
FRONT VIEW OF CABINET.

LOCO-MOTION CABINET

(FIGURE 1)

PARTS LIST

ITEM	CENTURI P/N	PART DESCRIPTION
1.	343-03-0200	TOP ANGLE HOLD DOWN BRACKET
2.	382-06-0400	SILK SCREENED MARQUEE PANEL
3.	361-10-0200	VINYL TRIM, 7 1/4" LONG
4.	361-03-0300	GLASS HOLDING BRACKET
5.	361-14-1000	VIEWING GLASS
6.	382-06-0200 382-06-0300	LEFT SIDE DECAL RIGHT SIDE DECAL
7.	382-06-0500	SILK SCREENED MONITOR OVERLAY
8.	-----	1-PLAYER START BUTTON
9.	-----	2-PLAYER START BUTTON
10.	-----	SPEED BUTTON - LEFT
11.	-----	4-POSITION JOYSTICK
12.	-----	SPEED BUTTON - RIGHT
13.	382-14-0100	CONTROL PANEL WIRED ASSEMBLY
14.	360-14-0700	COINCO COIN DOOR (MODIFIED)
15.	375-01-0900A	WOOD CABINET ASSEMBLY
16.	361-12-0900A	LINE CORD

LOCO-MOTION

LOCO-MOTION is the newest video game produced by CENTURI, INC. To a short rendition of "I've Been Working On The Railroad", a cubical network of track appears on screen. The network is composed of connecting squares of different colors, with each square containing a different shaped section of Train Track, and one blank square.

The Train is guided along on its destiny to all the stations by adjusting the direction of the Track. This is accomplished by moving the Joystick up, down, right, or left. The Track can be connected at any of the four blocks surrounding the blank square. The Track the Train travels over is distinguished by its bright yellow color. By connecting the Track at any one of the Junction points, also known as the Bonus Lines, a Bonus of 150 points is added to the game score, however which direction the Train will take is unknown until it reaches the Junction. The speed of the Train is increased by holding down the right or left Speed Button. Dead ends must be avoided.

As the Train travels through each station and picks up the passengers, 100 points are added to the game score. For each block of Track it crosses to reach the Stations, 10 points are added to the score. The Train must reach the Bonus Station before the Bonus reaches zero, or the Crazy Trains will appear and impose the danger of crashing into the Train. The Crazy Trains can be eliminated by connecting the Track in such a way they will crash into each other or dead ends. This portion of the Track is no longer usable after such a crash.

If the Train gets caught in a loop, beware of the Loop Sweeper appearing and chasing the Train in attempt to destroy it.

The Bonus Points of the Bonus Station are randomly determined, beginning with a high of 2470 points. The points are counted down randomly with each passing second, so the quicker the Bonus Station is reached, the greater the Bonus Points earned.

If all the Stations are successfully cleared before the Bonus Station reaches zero, 5,000 points are awarded. If the Train successfully clears the Stations after this time, 1,000 points are awarded.

When all the Stations have been perfectly cleared, a new network of Track appears on screen.

The game is over when all the Trains have eliminated.

LOCO-MOTION GAME INSTRUCTIONS

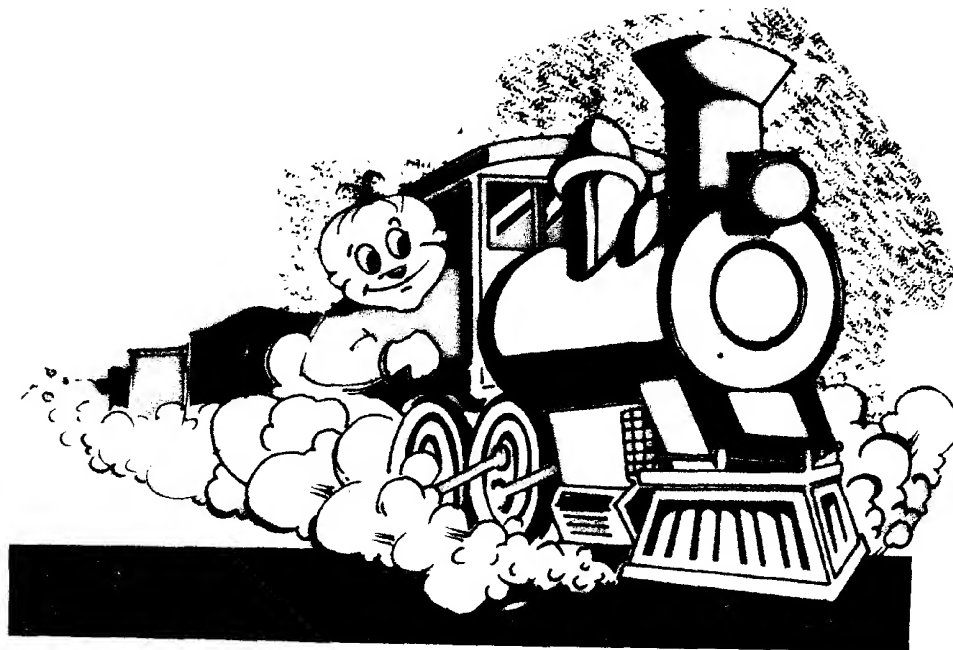
1. INSERT COIN(S) .
2. PRESS 1 or 2 PLAYER BUTTON.
3. GUIDE TRAIN PAST ALL STATIONS, PICKING UP PASSENGERS(100 pts.) AT EACH RAILROAD STOP.
4. TO INCREASE SPEED OF TRAIN, PRESS RIGHT OR LEFT SPEED BUTTON.
5. ADJUST COURSE OF TRACKS WITH JOYSTICK. YOUR TRAIN COURSE IS DISTINGUISHED BY BRIGHT COLOR CHANGES. BE CAREFUL TO AVOID DEAD ENDS.
6. BE CAREFUL TO AVOID LOOP SWEEPER WHEN FORMING LOOP LINES OF THE TRACK.
7. BONUS POINTS CAN BE EARNED BY TRAVELING OVER BONUS LINE TRACK (150 pts.), BUT DIRECTION OF TRAIN IS UNKNOWN UNTIL JUNCTION.
8. REACH STATION DISPLAYING BONUS POINTS BEFORE STATION BLOWS UP OR A CRAZY TRAIN APPEARS.
9. ELIMINATE CRAZY TRAINS BY CONNECTING TRACKS, CAUSING THEM TO CRASH. THIS TRACK CANNOT BE USED AFTER CRASH.
10. NEW SCREEN APPEARS AFTER ALL TRAIN STATIONS ARE CLEARED.

GAME POINT SCORING

"LOCO-MOTION"

STRATEGY	POINTS
1. TRAVELLING ACROSS BONUS LINES (LINES WHICH CONNECT AT JUNCTION).	SCORE 150 POINTS
2. PICKING UP PASSENGERS AT EACH RAILROAD STOP.	SCORE 100 POINTS
3. CROSSING EACH BLOCK OF TRAIN TRACK TO REACH RAILROAD STOPS.	SCORE 10 POINTS PER BLOC
4. PERFECTLY CLEARING ALL STATIONS WHEN BONUS STATION HAS NOT COUNTED DOWN TO ZERO POINTS.	SCORE 5,000 POINTS
5. PERFECTLY CLEARING ALL STATIONS AFTER BONUS STATION REACHES ZERO BONUS.	SCORE 1,000 POINTS

** BONUS STATION POINTS ARE RANDOMLY DETERMINED, WITH A BEGINNING HIGH OF 2470 POINTS.



INSTALLATION

Your game was shipped from the factory in ready-to-play condition. A brief inspection is suggested before the machine is removed from the carton. If there is damage to the shipping carton, contact the freight carrier for claim purposes. External damage could indicate possible damage to the cabinet and/or electronics components.

After the carton has been satisfactorily inspected, remove the machine from the shipping carton.

Examine the interior of the game for disconnected wires, cables, or harnesses. Make sure the electronic devices are securely mounted in their sockets, etc. Record the game serial number, since it will be required for reference and servicing.

ELECTRICAL REQUIREMENTS

Unless otherwise specified, this game is set to operate at 110 Volts A.C. (See Fig. 2 and 110/220 VAC conversion instructions.)

Power supply chassis schematic information and parts list are included in this manual.

ROUTINE MAINTENANCE & SERVICE

Because of the solid state electronic circuitry, this machine should require very little maintenance, and only occasional adjustments. However, it is necessary to take steps to insure this.

The volume control is located on the bottom side of the printed circuit board, farthest from the side of the cabinet, and can be accessed through the rear door.

The video monitor has been properly adjusted before shipping. Occasionally minor adjustments are necessary. Technical information, along with schematics, can be found in this manual. Adjustment controls for the monitor are located on the rear of the monitor.

"DO NOT MAKE ANY ADJUSTMENTS ON THIS MACHINE WHILE THE POWER IS ON!" This machine should only be adjusted by a "qualified" technician.

For Service Information, contact:

CENTURI, INC.

CUSTOMER SERVICE DEPARTMENT

#800-327-7710 (Outside the State of Fla.)

#305-556-5888 (In Florida)

POWER SUPPLY

The Computer Board in this game operates most efficiently and reliably when the power supply is set so the voltage on the Board is 5.0 Volts, ± 0.1 Volts. To check this, place a meter across 5 Volts, and ground, at the edge connector. If necessary, adjust the screwdriver control on the power supply, so the meter reads between 4.9 and 5.1 Volts.

The following Dip Switches for Loco-Motion are found on both the C.P.U. and Logic Board, and the Sound Board. The settings below are a guide in selecting optional game format.

DIP SWITCH 1

<u>SW. 1</u>	<u>SW. 2</u>	<u>SW. 3</u>	<u>SW. 4</u>	<u>COIN/PLAY OPTIONS</u>
Off	Off	Off	Off	1 Coin, 1 Play
Off	Off	Off	On	1 Coin, 2 Plays
Off	Off	On	Off	1 Coin, 3 Plays
Off	Off	On	On	1 Coin, 4 Plays
Off	On	Off	Off	1 Coin, 5 Plays
Off	On	Off	On	1 Coin, 6 Plays
Off	On	On	Off	1 Coin, 7 Plays
Off	On	On	On	2 Coins, 1 Play
On	Off	Off	Off	2 Coins, 3 Plays
On	Off	Off	On	2 Coins, 5 Plays
On	Off	On	Off	3 Coins, 1 Play
On	Off	On	On	3 Coins, 2 Plays
On	On	Off	Off	3 Coins, 4 Plays
On	On	Off	On	4 Coins, 1 Play
On	On	On	Off	4 Coins, 3 Plays
On	On	On	On	FREE PLAY

DIP SWITCH 2

<u>SWITCH 1</u>	<u>SWITCH 2</u>	<u>NUMBER OF TRAINS</u>
Off	Off	Three (3)
Off	On	Four (4)
On	Off	Five (5)
On	On	Two Hundred-Fifty Five (255)

SWITCH 3

Off
On

GAME CABINET VERSION

Cocktail Table
Upright Cabinet

SWITCH 4 has no assigned function.

SWITCH 5 - Off position Attract Mode is on
- On position, no Attract Mode

SWITCH 6 - On, Sound along with Attract Mode
Off, no sound in Attract Mode

110/220 VAC CONVERSION INSTRUCTIONS

This game contains a harness configuration which allows the machine to be operated from either a 110 VAC or 220 VAC, 50 Hz or 60 Hz power source. All games shipped from Centuri, Inc., are in the 220 VAC configuration. To change to the 220 VAC configuration follow the procedure below.

FIRST: Unplug the machine from the wall outlet to completely eliminate shock hazards.

SECOND: Remove the single 3 AMP slow-blow fuse found in the A.C. Distribution Bracket, and install two, 1.5 AMP slow-blow fuses. Next cut the #18 AWG. white jumper at both ends of the fuse holder, and replace the cover.

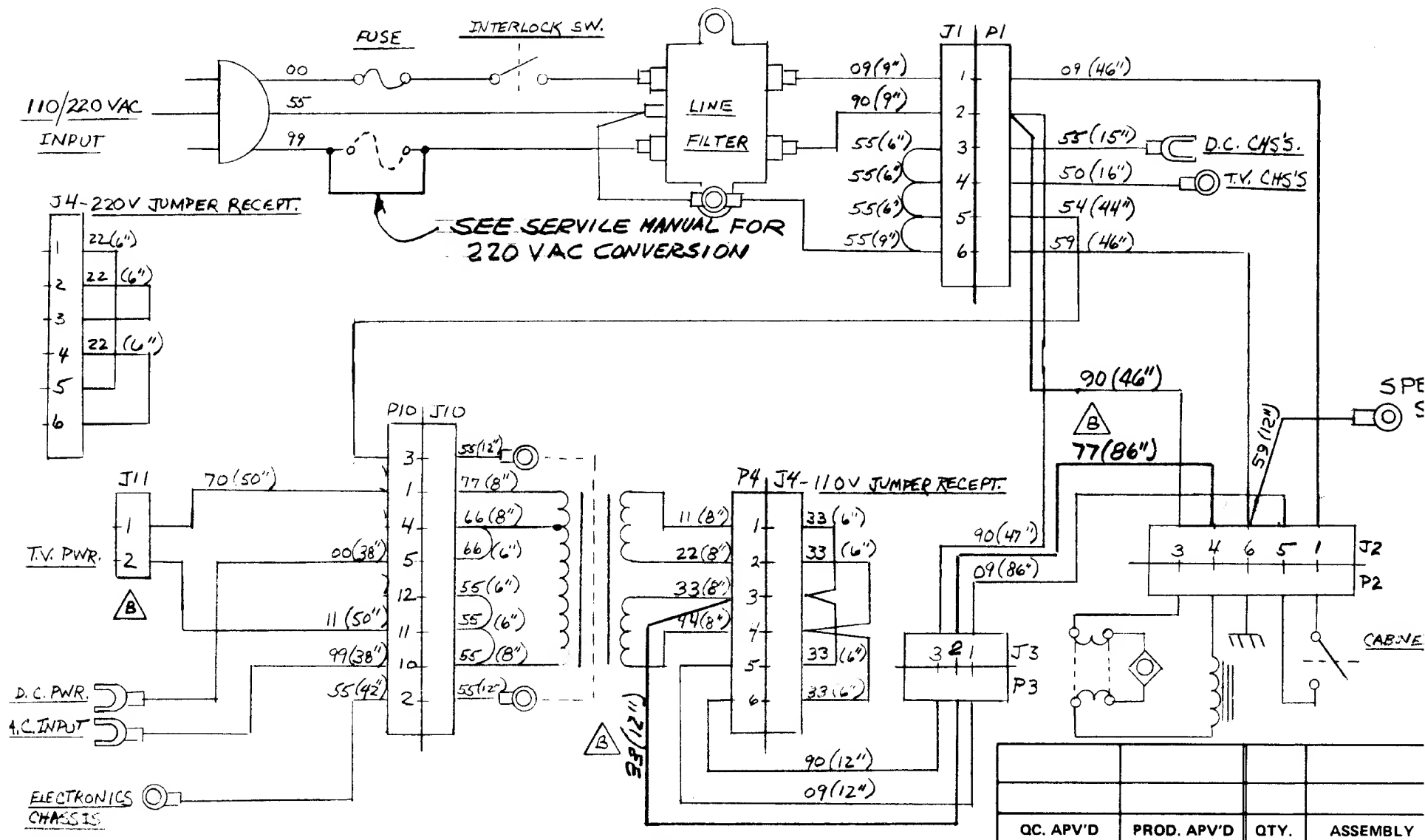
THIRD: On the game power transformer, locate the "orange" jumper plug which is marked, 110 VAC. Unplug the "orange" jumper, and plug in the "red" jumper marked 220 VAC.

To revert back to 110 VAC, replace the components originally removed from the Steps above.

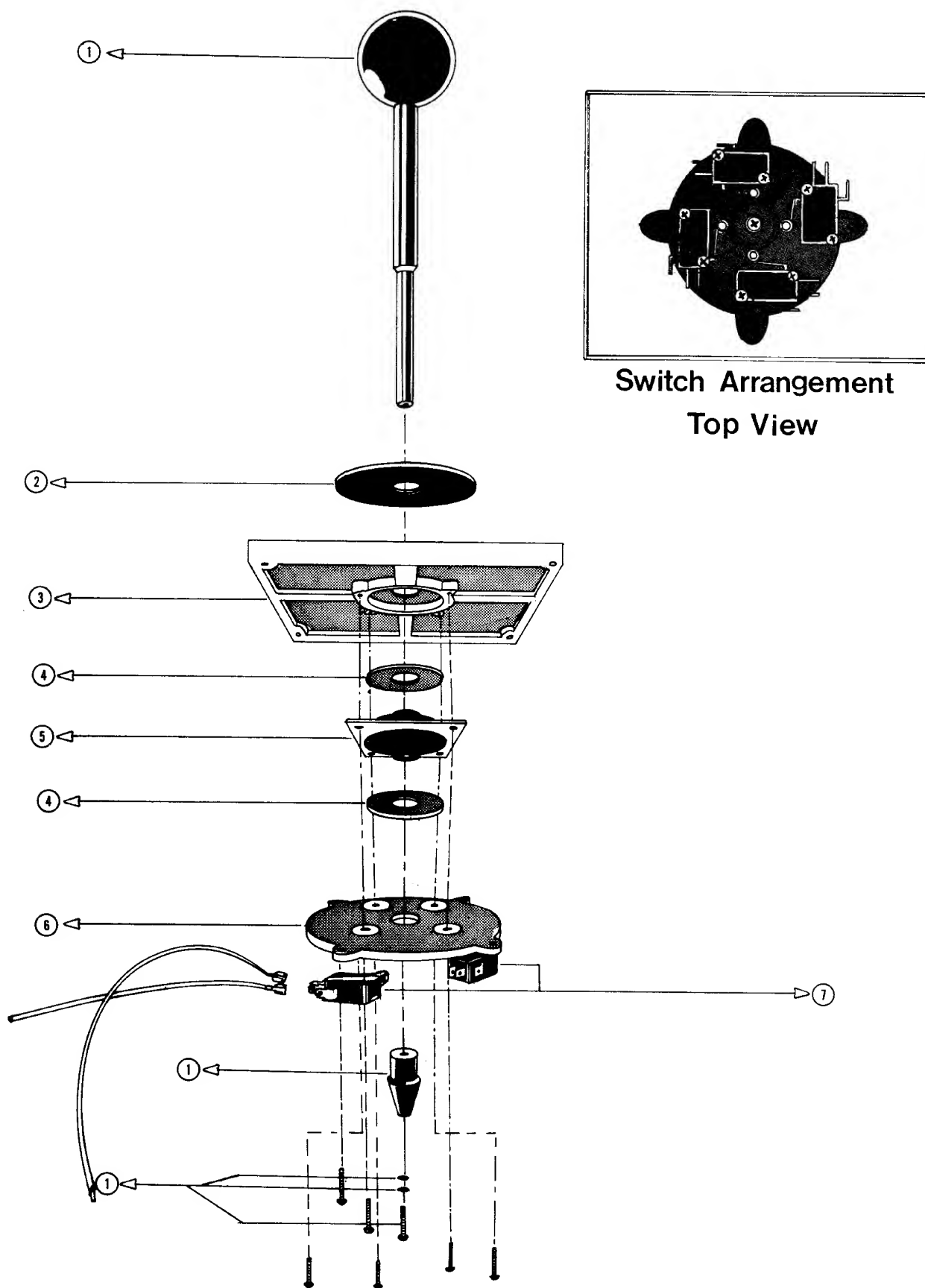
***NOTE: The common side of the A.C. Line must not be fused in the 110 VAC configuration - Replace the #18 AWG., white jumper wire.

(Refer also to FIG. 2, 110/220 POWER INTERCONNECT DIAGRAM, #370-10-0400B)

FIGURE 2



				TOLERANCES		centuri inc.				HIALEAH, FLORIDA 331	
				Unless Otherwise Specified							
				FRACTIONS	± 1/32	NAME					
				DECIMALS 2 PL	± .015	110/220 V POWER INTERCONNECT I.A.					
				DECIMALS 3 PL	± .005	MAT'L'S.					
				HOLES	+ .003	HEAT TREAT.		FINISH			
				ANGLES	± 1/2°	DWN.	APP'D	DATE	SCALE	PART NO.	R
				SHT. MET BENDS	± 2°	VAP		5-8-81		370-10-0400	
B		DELETED TV POW 3 ADDED WIRE 33(12") & 77(86").									
A											
REV. LET.	ECN NO.	REVISION	BY								



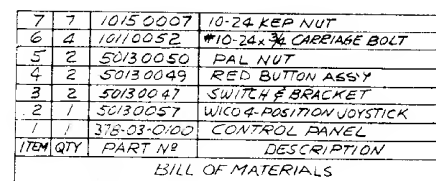
(FIG,3) EXPLODED VIEW OF JOY STICK ASS'Y

WICO JOYSTICK ASSEMBLY

(FIGURE 3)

PARTS LIST

ITEM	CENTRUI P/N:	MANUFACTURING P/N:	DESCRIPTION:	QNTY.
1.	50270174	151419-01	KNOB & SHAFT ASS'Y. w/ACTUATOR & E RING	1
2.	50270175	15950401	PLASTIC WASHER, 2"DIA.	1
3.	50270176	15954101	TOP PLATE FOR JOYSTICK	1
4.	50270177	15950501	BOTTOM WASHER	2
5.	50270178	15952301	DIAPHRAGM	1
6.	50270179	15954201	SWITCH MOUNTING PLATE	1
7.	50130072	V-15FL22-1C2-K	MICROSWITCH	4
8.	50270180	15954501	ACTUATOR GUARD	4
9.	50270182	15950601	SWITCH MOUNTING BRKT.	4



-14-

25¢ COIN

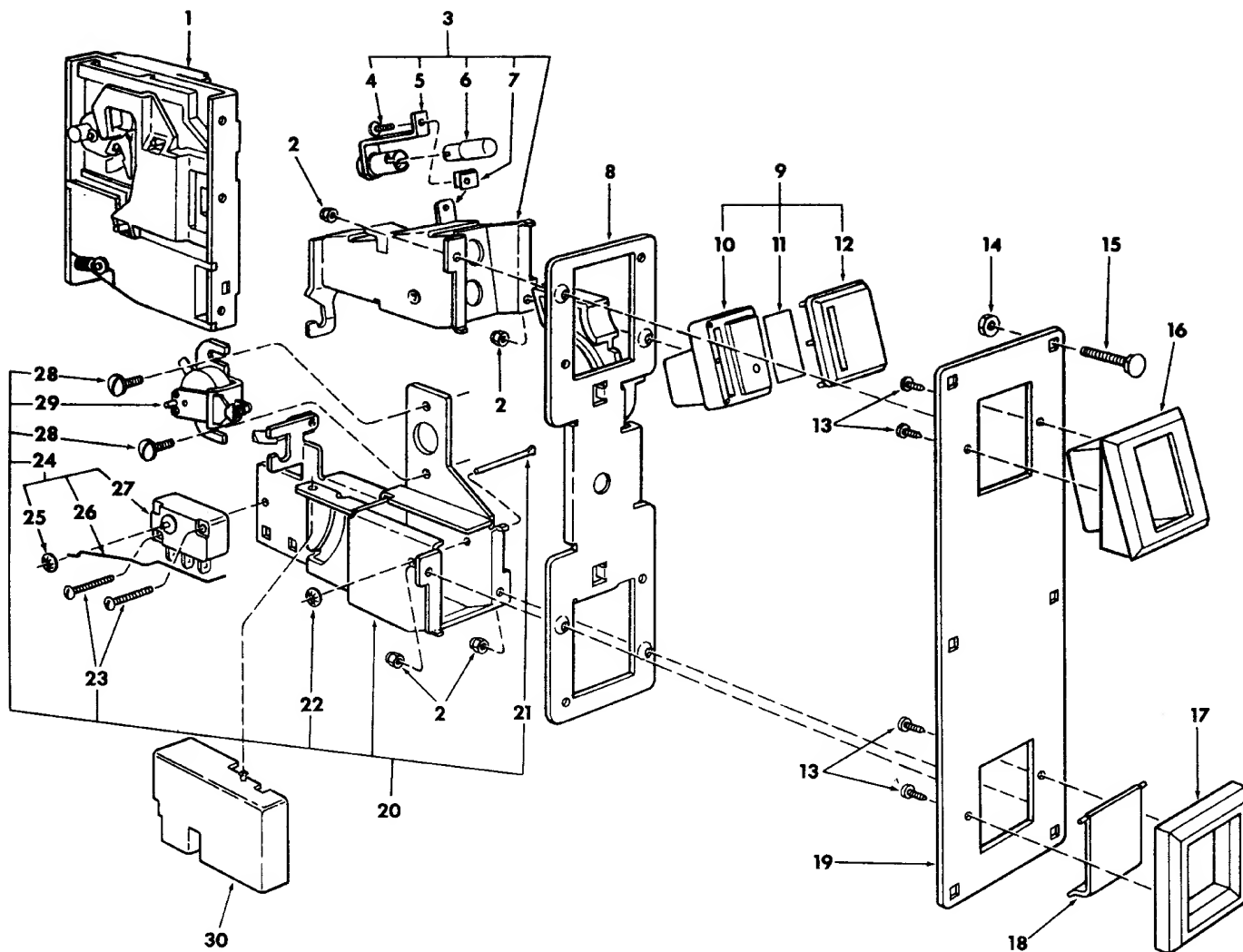


FIGURE 5

Index No.	Part No.	Description	Index No.	Part No.	Description
1	5301-10	25¢ Coin Acceptor	16	904588	Coin Inlet Housing
2	400-4	#4-40 Self Locking Nut	17	904590	Coin Return Cover
3	404351	Coin Inlet Chute Assembly	18	904599	Coin Return Door
4	110-4-6	4 x 3/8 Screw	19	404463	Frontplate Assembly, 3-1/8" x 9-1/4"
5	904717	Lamp Socket	20	404350	Coin Return Chute Assembly
6	904716	#47 Lamp (6.3 Volt)	21	905115	Bar
7	904712	Fastener	22	904936	Keeper
8	404464	Inner Panel/Lever Assembly	23	100-4-12	4-40 x 3/4 Screw
9	404348	Coin Return Button Assembly	24	404353	Switch & Wire Assembly
10	904591	Coin Return Button	25	900651	Retainer
11	904703	25¢ Price Decal	26	904710-1	Switch Wire-Silver
12	904589-2	Reject Cover Button (25¢)	27	904845	Switch
13	345-4-5	#4 x 5/16 Pan Head Screw	28	100-6-3	6-32 x 3/16 Screw
14	406-10	#10-24 Hex Nut (Mounting Hardware)	29	404354	12 Volt Crem Assembly
15	905022	#10-24 x 1-1/8 Carriage Bolt (Mounting Hardware)	30	904762	Switch Cover

2800-0 FRONT PLATE EXPLODED VIEW

(FIGURE 5)

PARTS LIST

<u>NO.</u>	<u>CENTURI P/N:</u>	<u>MANUFACTURING P/N:</u>	<u>DESCRIPTION:</u>
1.	50270144	5031-10	25¢ COIN ACCEPTOR
5.	50270169	904717	LAMP SOCKET
6.	50270170	904716	#47 LAMP (6.3 VOLT)
8.	50270172	404464	INNER PANEL/LEVER ASS'Y.
10.	50270145	904591	COIN RETURN BUTTON
11.	50270146	904703	25¢ PRICE DECAL
12.	50270147	904589-2	REJECT COVER BUTTON (25¢)
16.	50270149	904588	COIN INLET HOUSING
17.	50270157	904590	COIN RETURN BEZEL
18.	50270150	904599	COIN RETURN DOOR
19.	50270173	404463	FRONTPLATE ASS'Y. (3 ¹ / ₈ "x9 ¹ / ₄ ")
21.	50270168	905115	BAR
25.	50270141	900651	RETAINER
26.	50270142	904710-1	SWITCH-WIRE, SILVER
27.	50130061	904845	SWITCH
29.	50270165	404354	12 VOLT C.R.E.M. ASS'Y.
30.	50270164	904762	SWITCH COVER

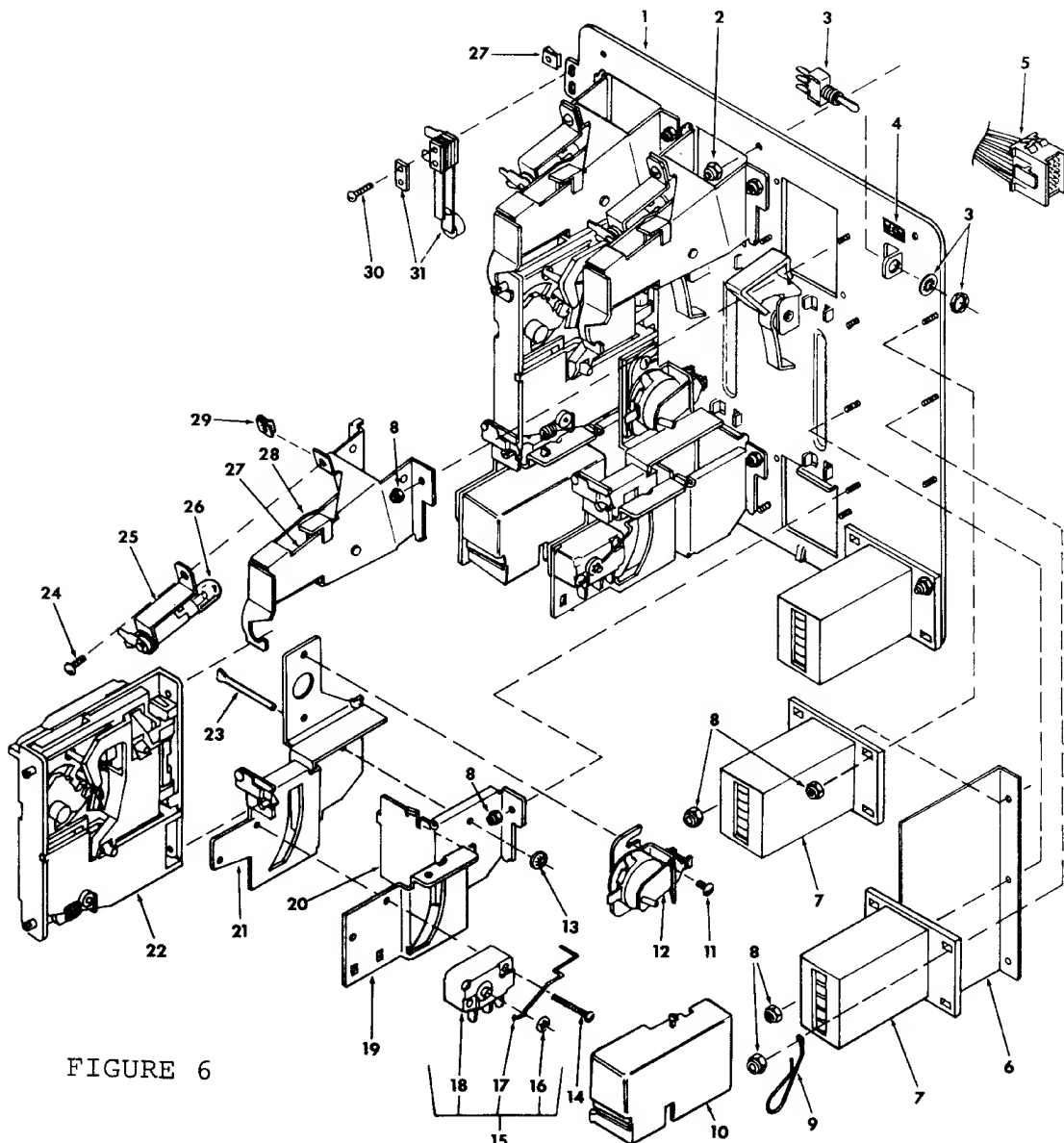


FIGURE 6

Index No.	Part No.	Description	Index No.	Part No.	Description
1	404429	Inner Panel With Levers Sub-Assembly	17	904710-1	Silver Switch Wire — for U.S. 25¢ Coin
2	400-8	Nut	18	904845	Switch
3	904782	Toggle Switch	19	904701	Coin Chute
4	904706	Test Switch Decal	20	904598	Coin Return Box
5		Custom Harness Assembly	21	404428	Switch and C.R.E.M. Coil Bracket Assembly
6	904822	Insulation	22	5301-10	25¢ Acceptor
7	404352	Coin Counter Assembly (6 Volt D.C.)	23	905115	Bar
8	400-4	Nut	24	110-4-6	Screw
9	904722	Wire Key Holder	25	904717	Miniature Bayonet-Base Lamp Socket
10	904762	Switch Cover	26	904716	#47 Lamp (6.3 Volt)
11	100-6-3	Screw	27	404418	Coin Inlet Chute Sub-Assembly
12	404354	C.R.E.M. Coil Assembly. 12 Volts D.C.	28	904594	Right Half of Coin Inlet Chute
13	904936	Keeper	29	904712	"U"-Type Fastener
14	100-4-12	Screw	30	116-4-8	Screw
15	404353	Coin Switch Assembly for U.S. 25¢ Coin	31	904704	Slam Switch Assembly
16	900651	Retainer			

2800 SERIES COIN DOOR EXPLODED VIEW

25¢ U.S. COIN

(FIGURE 6)

PARTS LIST

<u>NO.</u>	<u>CENTURI P/N:</u>	<u>MANUFACTURING P/N:</u>	<u>DESCRIPTION:</u>
1.	50270160	404429	INNER PANEL w/LEVERS SUBASS'Y.
3.	50130062	904782	TOGGLE SWITCH
4.	50270161	904706	TEST SWITCH DECAL
5.	364-62-1000A	-----	CUSTOM HARNESS ASS'Y.
6.	50270162	904822	INSULATION
7.	50270140	404352	COIN COUNTER ASS'Y.
9.	50270163	904722	WIRE KEY HOLDER
10.	50270164	904762	SWITCH COVER
12.	50270165	404354	C.R.E.M. COIL ASS'Y. (12 VOLT D.C.)
17.	50270142	904710-1	SILVER SWITCH WIRE- FOR 25¢ U.S. COIN
18.	50130061	904845	SWITCH
19.	50270143	904701	COIN CHUTE
20.	50270166	904598	COIN RETURN BOX
21.	50270167	404428	SWITCH & C.R.E.M. COIL BRACKET ASS'Y.
22.	50270144	5301-10	25¢ ACCEPTOR
23.	50270168	905115	BAR
25.	50270169	904717	MINIATURE BAYONET-BASE LAMP SOCKET
26.	50270170	904716	#47 LAMP (6.3 VOLTS)
27.	50270171	404418	COIN INLET CHUTE-SUBASS'Y.
31.	50130063	904707	SLAM SWITCH ASSEMBLY

2800 SERIES COIN DOOR EXPLODED VIEW

25¢ U.S. COIN

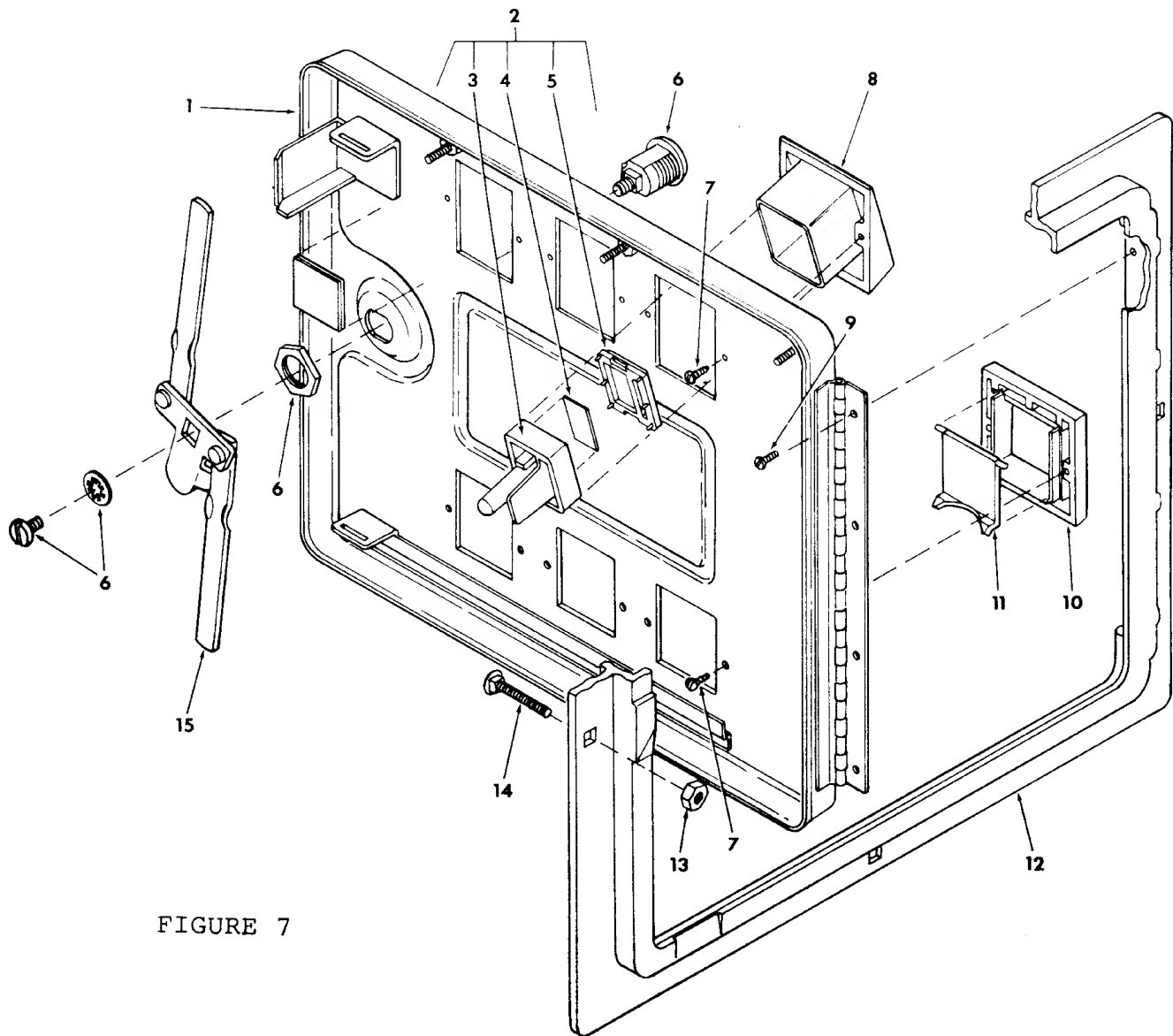


FIGURE 7

Index No.	Part No.	Description	Index No.	Part No.	Description
1	404341	Coin Door Only (2 Coin)	7	345-4-5	Screw
	404341-1	Coin Door Only (3 Coin)	8	904588	Coin Button Housing
2	404348-1	Coin Return Button Assembly for U.S. 25¢ Coin	9	325-4-4	Screw
3	904591	Coin Return Button	10	904590	Coin Return Bezel
4	904703	U.S. 25¢ Price Decal	11	904599	Coin Return Cover
5	904589-2	Coin Return Button Cover for U.S. 25¢ Coin	12	904581	Coin Door Frame, 11-5/8" x 13-3/8" Mounts in a 10-3/8" x 12-3/16" Opening
6	904707-1	Lock Assembly	13	406-416	Hex Nut
			14	904734	Carriage Bolt
			15	404357	Locking Arm Assembly

2800 SERIES COIN DOOR EXPLODED VIEW

25¢ U.S. COIN

(FIGURE 7)

PARTS LIST

<u>NO.</u>	<u>CENTURI P/N:</u>	<u>MANUFACTURING P/N:</u>	<u>DESCRIPTION:</u>
1.	50270152	404341	COIN DOOR ONLY (2 COIN)
2.	50270158	404348-1	COIN DOOR BUTTON ASS'Y. FOR U.S. 25¢ COIN
3.	50270145	904591	COIN RETURN BUTTON
4.	50270146	904703	U.S. 25¢ PRICE DECAL
5.	50270147	904589-2	COIN RETURN BUTTON COVER
6.	50270148	904707-1	LOCK ASSEMBLY w/KEYS
8.	50270149	904588	COIN BUTTON HOUSING (INLET HOUSING)
10.	50270157	904590	COIN RETURN BEZEL
11.	50270150	904599	COIN RETURN COVER
12.	50270151	904581	COIN DOOR FRAME (11 5/8"x13 3/8")
15.	50270159	404357	LOCKING ARM ASSEMBLY

<u>ITEM.</u>	<u>PART NUMBER</u>	<u>DESCRIPTION</u>	<u>QNTY.</u>
1.	50010341	Z-80A CPU	1
2.	50010035LS	74LS161 I.C.	9
3.	50010248LS	74LS138 I.C.	2
4.	50010224LS	74LS259 I.C.	1
5.	50010195LS	74LS367 I.C.	3
6.	50010008LS	74LS20 I.C.	3
7.	50010019LS	74LS74 I.C.	5
8.	50010026LS	74LS107 I.C.	1
9.	50010264LS	74LS368 I.C.	2
10.	50010249LS	74LS245 I.C.	2
11.	50010344LS	74LS373 I.C.	2
12.	50010247LS	74LS241 I.C.	2
13.	50010022LS	74LS86 I.C.	6
14.	50010035	74161 I.C.	1
15.	50010192LS	74LS139 I.C.	4
16.	50010105LS	74LS32 I.C.	2
17.	50010005LS	74LS04 I.C.	2
18.	50010045LS	74LS157 I.C.	10
19.	50010004LS	74LS02 I.C.	2
20.	50010030LS	74LS174 I.C.	2
21.	50010002LS	74LS00 I.C.	2
22.	50010262LS	74LS283 I.C.	2
23.	50010096LS	74LS08 I.C.	3
24.	50010343LS	74LS109 I.C.	2
25.	50010252LS	74LS374 I.C.	1
26.	50010245LS	74LS21 I.C.	1
27.	50010261LS	74LS273 I.C.	1
28.	50010222LS	74LS194 I.C.	2
29.	50010218LS	74LS377 I.C.	3
30.	50010345LS	74LS375 I.C.	2
31.	50010270	MMI 633-1J	3
32.	50001329	2125A I.C.	6
33.	50010231	MMI 6301-I I.C.	2
34.	50010342	7489 I.C.	1

C.P.U. AND LOGIC BOARD

#50330023

<u>ITEM</u>	<u>PART NUMBER</u>	<u>DESCRIPTION</u>	<u>QNTY.</u>
35.	50010314	2732 I.C.	7
36.	50010317	MSM 2128 (OKI)	3
37.	50150061	24 PIN I.C. SOCKET	9
38.	50150330	34 PIN RT. ANGLE PCB HEADER	1
39.	50020128	2SC2320 TRANSISTOR	1
40.	50020130	2SA697 TRANSISTOR	1
41.	50130034	8 POSITION DIP SWITCH	1
42.	50360007	1K OHM x 4 S.I.P.	4
43.	50360015	1K OHM x 6 S.I.P.	1
44.	50360006	1K OHM x 8 S.I.P.	3
45.	50070013	18.432 MHz CRYSTAL	1
46.	50040010	0.1mfd, 16V., DISC CERAMIC CAPACITOR	54
47.	50040006	100pfd, 50V., DISC CERAMIC CAPACITOR	3
48.	50040073	470pfd, 25V., DISC CERAMIC CAPACITOR	1
49.	50060138	220mfd, 16V., ELECTROLYTIC RADIAL CAP.	1
50.	50060214	220mfd, 10V., ELECTROLYTIC RADIAL CAP.	1
51.	50060139	47mfd, 16V., ELECTROLYTIC RADIAL CAP.	1
52.	50040146	.047mfd, 50V., MYLAR CAPACITOR	1
53.	50060218	22mfd, 16V., TANTALUM CAPACITOR	1
54.	50030095	330 OHM, 1/4W., 5% RESISTOR	2
55.	50030006	4.7K OHM, 1/4W., 5% RESISTOR	3
56.	50030125	220 OHM, 1/4W., 5% RESISTOR	4
57.	50030256	100 OHM, 1/4W., 5% RESISTOR	1
58.	50030215	20K OHM, 1/4W., 5% RESISTOR	1
59.	50030063	10K OHM, 1/4W., 5% RESISTOR	1
60.	50030051	1K OHM, 1/4W., 5% RESISTOR	6
61.	50030010	470 OHM, 1/4W., 5% RESISTOR	5
62.	382-12-0200	C.P.U. LOGIC TO SOUND BOARD HARNESS	1
63.	50170014	BUSS WIRE, 24 AWG.	1"
64.	50170007	INSULATED WIRE, 24 AWG.	26"
65.	50100100	10D1 DIODE	1
66.	50210246	KT-7198-1 CPU LOGIC BOARD CARD	1

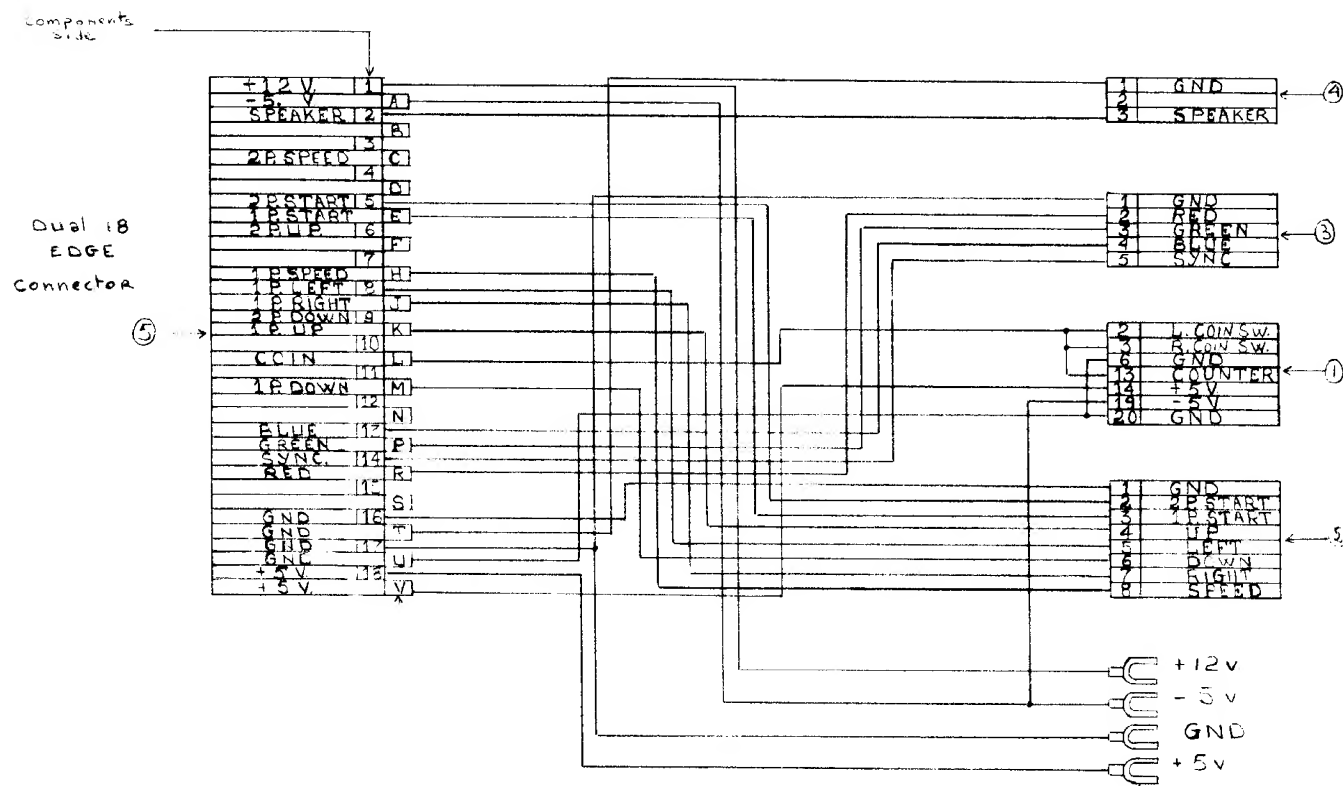
1.	50010030LS	74LS174 I.C.	2
2.	50010248LS	74LS138 I.C.	1
3.	50010019LS	74LS74 I.C.	1
4.	50010004LS	74LS02 I.C.	1
5.	50010195LS	74LS367 I.C.	5
6.	50010002LS	74LS00 I.C.	1
7.	50010105LS	74LS32 I.C.	1
8.	50010204LS	74LS393 I.C.	1
9.	50010023LS	74LS90 I.C.	1
10.	50010024LS	74LS93 I.C.	1
11.	50010261LS	74LS273 I.C.	1
12.	50010136	4066 I.C.	3
13.	50010005	7404 I.C.	1
14.	50010088	LM 741	1
15.	50010187	Z-80 C.P.U.	1
16.	50010177	AY-3-8910 PSG	2
17.	50010314	2732 EPROM	1
18.	50010202	2114L-3 RAM	2
19.	50010340	M51516L (MITSUBISHI)	1
20.	50020128	2SC2320 TRANSISTOR	3
21.	50020129	2SD361 TRANSISTOR	2
22.	50360006	1K x 8 S.I.P. NETWORK RESISTOR	3
23.	50130046	6 POSITION DIP SWITCH	1
24.	50080048	VR 200 OHM TRIMMER EVM-JOG (NATIONAL)	1
25.	50070019	14.318 MHz CRYSTAL	1
26.	50150060	40 PIN I.C. SOCKET	2
27.	50150061	24 PIN I.C. SOCKET	2
28.	50090026	HEAT SINK (HS-516)	1
29.	50100100	10D1 DIODE	2
30.	50040008	0.1mfd., 12 V., DISC CERAMIC CAPACITOR	45
31.	50040073	470pfd, 25 V., DISC CERAMIC CAPACITOR	1
32.	50040006	100pfd, 50 V., DISC CERAMIC CAPACITOR	1
33.	50040146	0.047mfd, 50 V., MYLAR CAPACITOR	6
34.	50040182	.01mfd, 50 V., MYLAR CAPACITOR	1
35.	50040180	1000pfd, 50 V., MYLAR CAPACITOR	1
36.	50040169	0.1mfd, 50 V., MYLAR CAPACITOR	1
37.	50060203	.22mfd, 35 V., TANTALUM CAPACITOR	1
38.	50060219	.15mfd, 35 V., TANTALUM CAPACITOR	1
39.	50060192	6.8mfd, 16 V., TANTALUM CAPACITOR	1
40.	50060220	100mfd, 25 V., ELECTROLYTIC, RADIAL,CAP.	2
41.	50060190	47mfd, 25 V., ELECTROLYTIC, RADIAL, CAP.	1
42.	50060214	220mfd, 20 V., ELECTROLYTIC, RADIAL,CAP.	1
43.	50030125	220 OHM, 1/4W., 5% RESISTOR	19
44.	50030213	820 OHM, 1/4W., 5% RESISTOR	2
45.	50030352	2K OHM, 1/4W., 5% RESISTOR	1
46.	50030001	2.2K OHM, 1/4W., 5% RESISTOR	1
47.	50030051	1K OHM, 1/4W., 5% RESISTOR	9
48.	50030197	5.1K OHM, 1/4W., 5% RESISTOR	7
49.	50030063	10K OHM, 1/4W., 5% RESISTOR	2
50.	50170007	INSULATED JUMPER, 24 AWG.	3"
51.	50170014	BUSS WIRE, 24 AWG.	1"
52.	50150330	34 PIN RT. ANGLE HEADER w/RETAINER	1
53.	12010004	M3 x 10 MACHINE SCREW	2
54.	12010006	M3 x 6 MACHINE SCREW	2
55.	12010005	M3 SPRING SCREW	4
56.	50150331	RTB-1.5-2F (J.S.T.) 2 PIN WAFER	1
57.	50210247	KT-3106-2 SOUND BOARD CARD	1

PARTS LIST - SHINDENGEN POWER SUPPLY

<u>SYMBOL:</u>	<u>DESCRIPTION:</u>	<u>USAGE:</u>
T1	TRANSFORMER, SINGLE PHASE, 2A VA	1
L1	CHOKING COIL, 1.6mH, 1.5A	1
L2, L4	CHOKING COIL, SF-T8-50S-03	2
L3	CHOKING COIL, SF-HP-2A-03	1
D1	DIODE, V19G	1
D2	DIODE, V06C	1
D3, D6	DIODE, 1S1588	2
D4	DIODE, S15S3	1
D5, D7	DIODE, 5CH1M	2
D12, D13	DIODE, F113B	2
D14	DIODE, F113B	1
RF1	DIODE, S4VB40 (BRIDGE TYPE)	1
Q1	TRANSISTOR, 2SC2504	1
Q2	TRANSISTOR, 2SD467 (B)	1
Q3	TRANSISTOR, 2SC460 (B)	1
Q4	TRANSISTOR, 2SA673 (B)	1
IC1	INTEGRATED CIRCUIT, RM723DC or HA17723G-02	1
PC1	PHOTO COUPLER, PS2001	1
R1	RESISTOR, 2 WATT, 18 OHM	1
R8, R9	RESISTOR, 2 WATT, 47K OHM	2
R3, 1-4	RESISTOR, 2 WATT, 15 OHM	4
R4	RESISTOR, 1 WATT, 56 OHM	1
R12	RESISTOR, 1 WATT, 100 OHM	1
R28	RESISTOR, 1 WATT, 470 OHM	1
R7	RESISTOR, 1 WATT, 0.56 OHM	1
R26	RESISTOR, 1 WATT, 0.82 OHM	1
R23	RESISTOR, 1/4 WATT, 22 OHM	1
R10	RESISTOR, 1/4 WATT, 33 OHM	1
R27	RESISTOR, 1/4 WATT, 68 OHM	1
R2	RESISTOR, 1/4 WATT, 330-470 OHM	1
R22	RESISTOR, 1/4 WATT, 220 OHM	1
R21	RESISTOR, 1/4 WATT, 270 OHM	1
R6	RESISTOR, 1/4 WATT, 330 OHM	1
R11	RESISTOR, 1/4 WATT, 68 OHM	1
R20	RESISTOR, 1/4 WATT, 470 OHM	1
R17	RESISTOR, 1/4 WATT, 680 OHM	1
R19	RESISTOR, 1/4 WATT, 800 OHM	1
R18	RESISTOR, 1/4 WATT, 1.2K OHM	1
R5	RESISTOR, 1/4 WATT, 10K OHM	1
R16	RESISTOR, 1/4 WATT, 220K OHM	1
R29	RESISTOR, 3 WATT, 27 OHM	1
R39	RESISTOR, 1/4 WATT, 4.7K OHM	1
R38	RESISTOR, 1/4 WATT, 5.6K OHM	1
R24	RESISTOR, 1/4 WATT, 330 OHM	1
R25	RESISTOR, 1/4 WATT, 150 OHM	1
RV1	VARIABLE RESISTOR, RJ-6P501	1

<u>SYMBOL:</u>	<u>DESCRIPTION:</u>	<u>USAGE:</u>
C1, C2	CAPACITOR, ECK-DAL102E	2
C3-1,-2	CAPACITOR, 160VSN100	2
C9, C10	CAPACITOR, SM10VB-2200	2
C11, C23	CAPACITOR, SM10VB-2200	2
C12, C13, C15	CAPACITOR, SL25VB-10	3
C27	CAPACITOR, SL25VB-10	1
C18, C19, C20	CAPACITOR, SM35VB-1000	3
C26	CAPACITOR, SM35VB-1000	1
C21, C22, C25	CAPACITOR, SM16VB-1000	3
C5	CAPACITOR, DMY21H472K	1
C6	CAPACITOR, DMY21H104K	1
C14, C16	CAPACITOR, DMY21H222K	2
C4	CAPACITOR, CM20XC511K5	1
C8	CAPACITOR, MDD22G473K	1
C5-2	CAPACITOR, DMY21H222K	1
F1, F2	ENCLOSED TYPE FUSE, 3A	2

THE MATERIAL CONTAINED HEREIN IS CONFIDENTIAL
AND NO PART OF IT CAN BE REPRODUCED WITHOUT THE
EXPRESSED PERMISSION OF CENTURI, INC.



22	18	50170003	TY-WRAPS 4"
21	85	50170006	" " WHITE " "
20	110	50178806	" " GRAY " "
19	100	50177700	" " VIOLET " "
18	105	50176606	" " BLUE " "
17	85	50175500	" " GREEN " "
16	48	50174406	" " YELLOW " "
15	66	50173306	" " ORANGE " "
14	81	50172206	" " RED " "
13	48	50171106	" " BROWN " "
12	194	50170008	" " BLACK 22 AWG
11	12	50179404	" " BLACK " "
10	18	50172204	INSUL. WIRE RED 12 AWG
9	21	50150318	Rimp term. (MOLEX # 03-04-030)
8	7	50150269	FEMALE PIN (505062-1)
7	15	50150223	FEMALE PIN (52-04-1116)
6	4	50150213	INSULATED OPEN LUG
5	1	50150210	DUAL 3 PIN CONN (04-06-02)
4	1	50150231	3 PIN RECEPT. (03-04-103)
3	1	50150262	6 PIN RECEPT. (03-04-101)
2	1	50150263	12 PIN RECEPT. (03-04-102)
1	1	50150268	24 PIN RECEPT. (03-04-104)

BILL OF MATERIAL			
QC. APV'D	PROD. APV'D	QTY.	ASSEMBLY NO

				TOLERANCES		centuri		HIALEAH, FLORIDA 33014	
				Unless Otherwise Specified		NAME		CPU HARNESS	
				FRACTIONS ± 1/32		MAT'L'S.		HEAT TREAT.	
				DECIMALS 2 PL ± .015		DATE		SCALE	
				DECIMALS 3 PL ± .005		2/15/82		382-12-0100	
				HOLES + .003		PART NO.		REV	
				- .001		3			
				ANGLES ± 1/2°					
				SHT. MET BENDS ± 2°					
REV. LET.	ECN NO.	REVISION	BY						

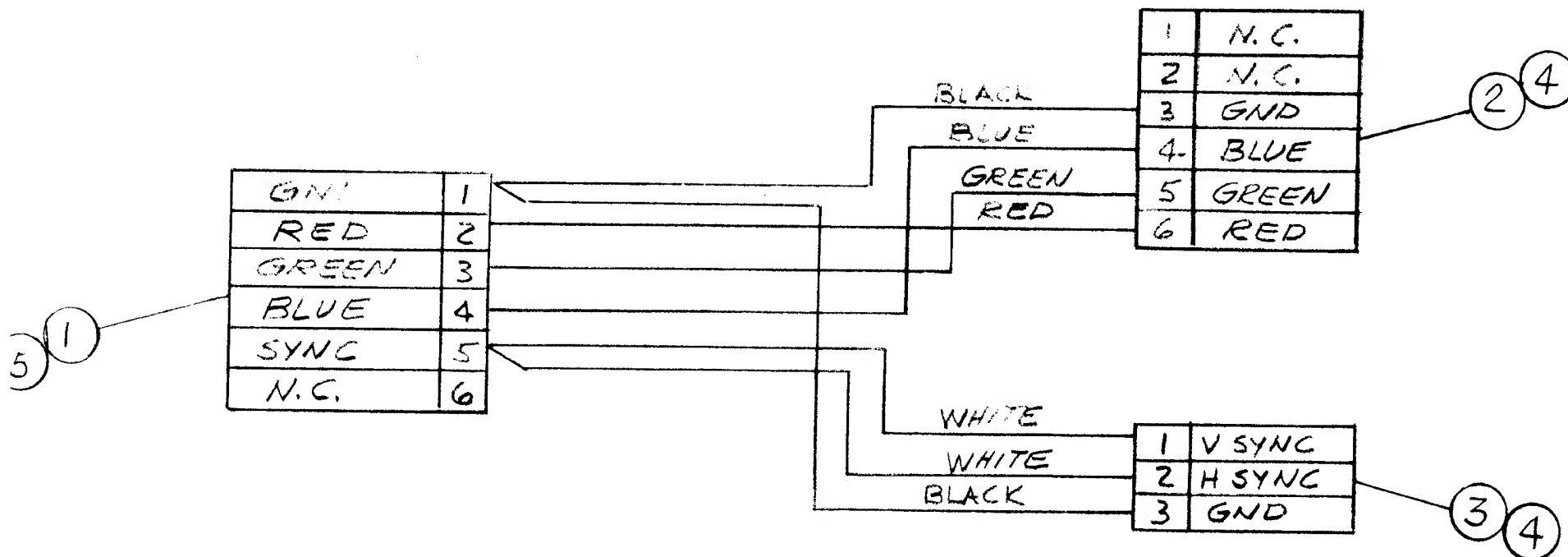
AF 17899A



		1	377-01-0
QC. APV'D	PROD. APV'D	QTY.	ASSEMBLY

27

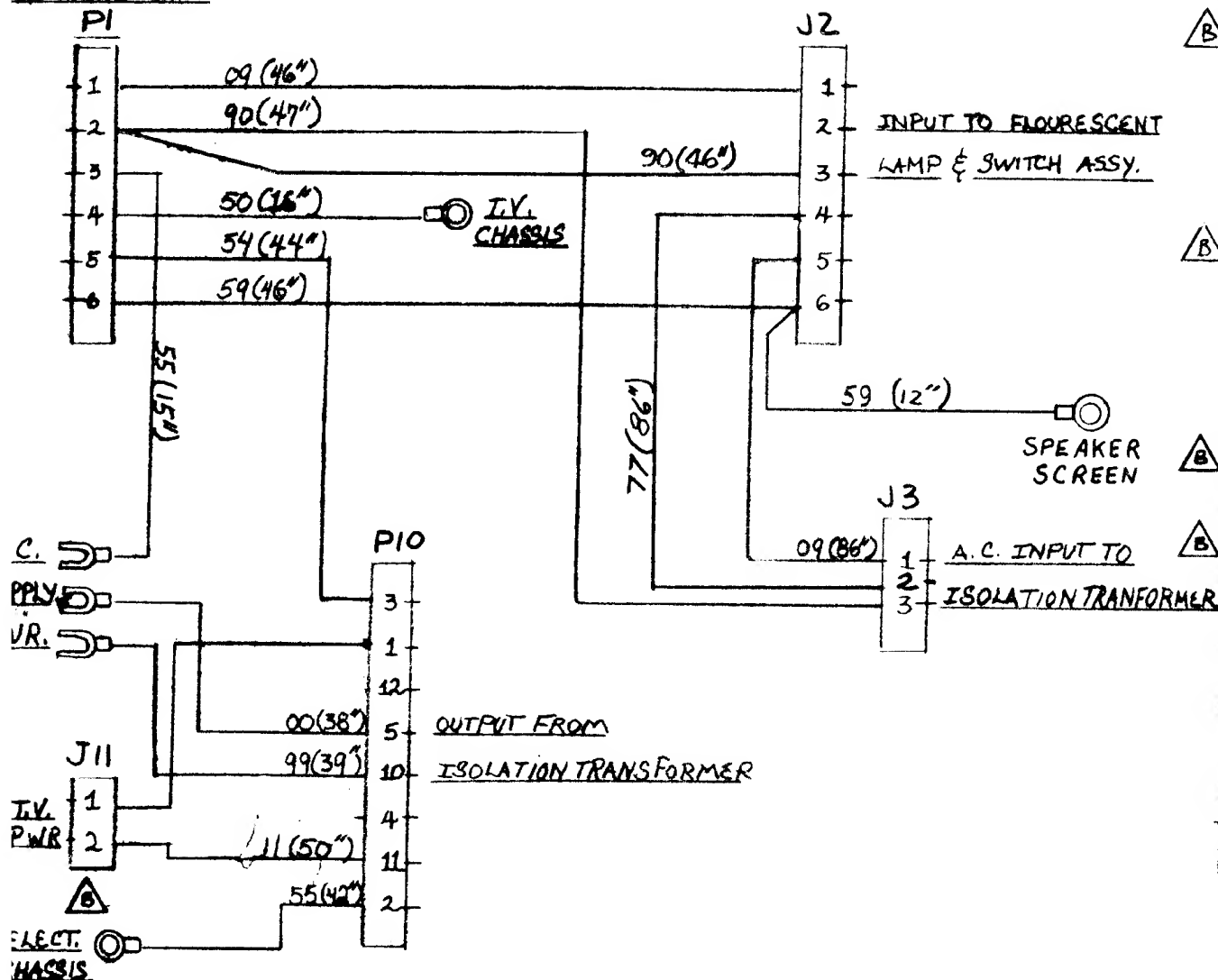
NOTE ALL WIRES 22 AWG., 12" LONG



5	5	50150222	CRIMP TERMINAL, MALE, REEL	MOLEX					
4	7	50150274	CRIMP TERMINAL	MOLEX					
3	1	50150301	CRIMP TERMINAL HOUSING 3 PIN	MOLEX					
2	1	50150303	CRIMP TERMINAL HOUSING 6 PIN	MOLEX				1	377-01-01
1	1	50150260	PLUG, 6 PIN	MOLEX				1	364-01-01
ITEM	QTY	PART NO	DESCRIPTION	MFG	QC. APV'D	PROD. APV'D	QTY.	ASSEMBLY	
D		CHANGES PART NO. OF ITEM 4 From 50150104 TO 50150274		JTS	<div>centuri</div> <div>HIALEAH, FLORIDA 33</div>				
E	?	?		?					
C	364-37	CHG'D CRIMP TERM. HOUSING + INCL. BILL OF MATERIAL		J.T.S.	NAME ELECTROHOME MONITOR SIGNAL HARNESS				
REV. LET.	ECN NO.	REVISION		BY					
					MAT'L'S. SEE ABOVE				
					HEAT TREAT. ~				
					FINISH ~				
					DWN. AAN				
					APP'D WJ				
					DATE 5-22-81				
					SCALE =				
					PART NO. 364-12-0500				
					F				

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EXPRESSED PERMISSION OF CENTURI, INC.

A.C. LINE CMTV.

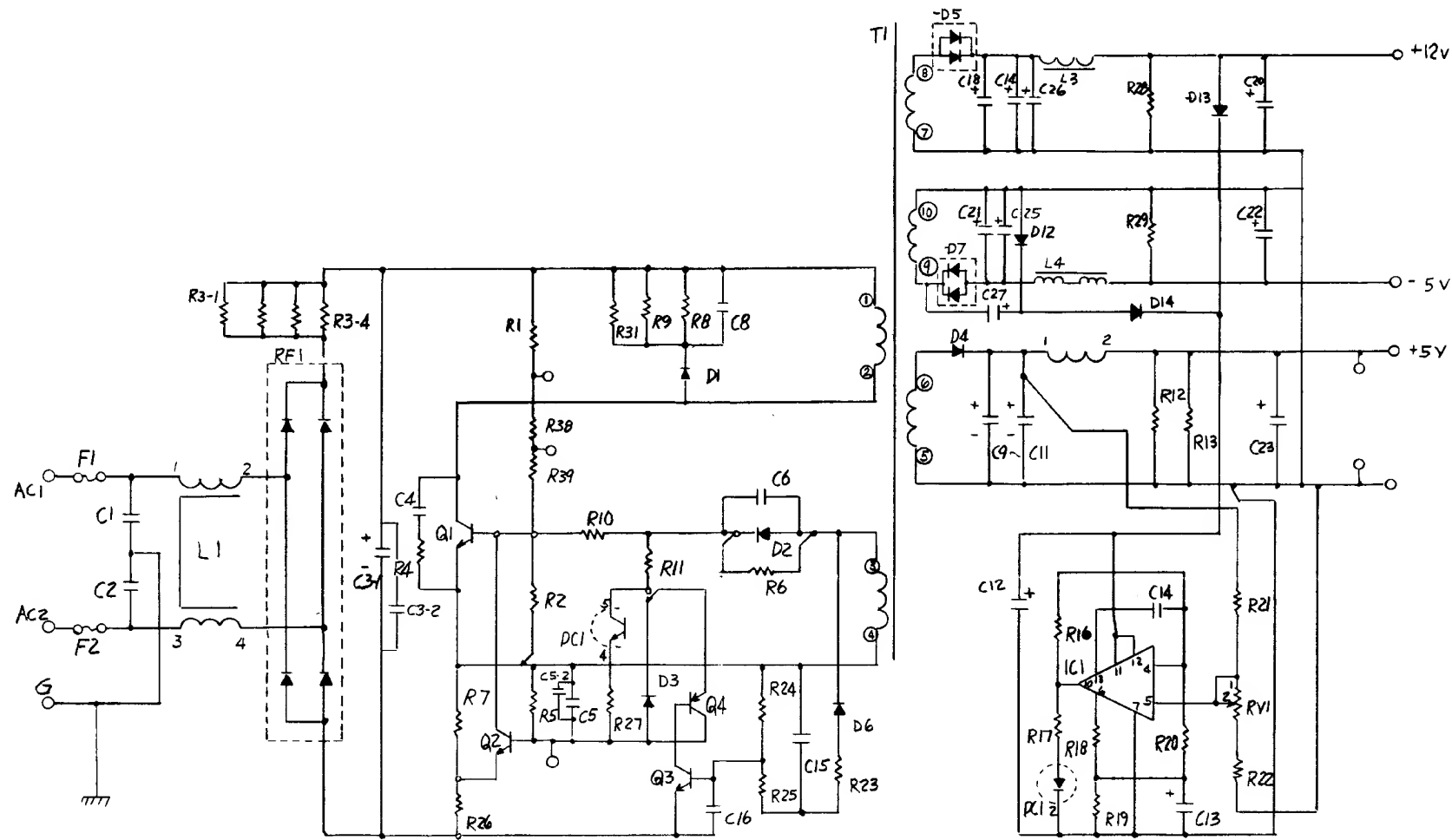


QTY	PART NO.	DESCRIPTION
22	50151104	Brown wire #18
21	50157004	Violet black stripe #18A
20		
19		
18	50175904	Green white stripe #18A
17	44 50175404	Green yellow stripe #18A
16	16 50175004	Green black stripe #18A
15	132 50170904	Black white stripe #18A
14	93 50179004	White/black stripe #18A
13	86 50177704	VIOLET WIRE #18A
12	57 50175504	Green wire #18A
11	39 50170004	White wire #18A
10	38 50174904	Black wire #18A
9	1 50150231	3 PIN RECEPT W/EARST MOLEX #03-09-1031
8	9 50150278	FEMALE PINS REEL MOLEX #03-09-1116
7	12 50150277	MALE PINS REEL MOLEX #03-09-2116
6	3 50150096	OPEN LUG HOLLINSWORTH #EE-18162
5	3 50150105	RING LUG HOLLINSWORTH #R41225
4	1 50150322	2 CKT RECEPT MOLEX 19-09-1029
3	1 50150260	6 PIN PLUG W/EARST MOLEX #03-09-3061
2	1 50150262	6 PIN RECEPT W/EARST MOLEX #03-09-1061
1	1 50150261	12 PIN PLUG W/EARST MOLEX #03-09-2122
CENTURI PART NO.		Bill of Materials

QC. APV'D	PROD. APV'D	QTY.	ASSEMBLY

				TOLERANCES		centuri inc.			
				Unless Otherwise Specified		HIALEAH, FLORIDA 3			
				FRACTIONS	± 1/32	NAME			
				DECIMALS 2 PL	± .015	Cabinet Power Harness			
				DECIMALS 3 PL	± .005	MATERIALS			
				HOLES	± .003	HEAT TREAT.			
				ANGLES	± 1/2°	FINISH			
				SHT. MET BENDS	± 2°	DWN. 1/3			
REV. LET.	ECN NO.	REVISION	BY			DATE	SCALE	PART NO.	
B		ADDED ITEM 4: CHG QTY ITEM 7 & 9 11 J11, J3, J2 P1 P10 DELETED TV PWR. 3 & 20	JTS			5-6-81	X	370-12-0200	
A	370-24	ADDED GREEN/WHITE WIRE - 12" AND 18" RING LUG * 50150105	JTS						

BRUNING 40-21 19207




REVISIONS						
REV. LETTER	ITEM NO.	ECN NO.	DESCRIPTION	DISPOSITION OF EXISTING PARTS		ENGR'G APP'D
				RE- WORK	SCRAP	

				TOLERANCES		centuri		HIALEAH, FLORIDA 33014			
				UNLESS OTHERWISE SPECIFIED		TITLE: SHINDENGEN POWER SUPPLY SCHEMATIC					
				FRACTIONS	± 1/32	DWN	APP'D	DATE	SCALE	DWG NO.	REV.
				DECIMALS	± .03	AAN	SA	1-14-81	1/2"	363-17-0300	
				DECIMALS	± .010						
				HOLES	± .002						
				ANGLES	± 1/2°						
NEXT ASSEMBLY											



TOLERANCES		QC. AP'VD		PROD. AP'VD		QTY.		ASSEMBLY NO.	
Unless Otherwise Specified		centur						30330023	
FRACTIONS ± 1/32		NAME						HIALEAH, FLORIDA 33014	
DECIMALS ± .016		LOCOMOTION SCHEM. CPU+LOGIC BD.							
DECIMALS ± .006		M.A.T.'S.		HEAT TREAT.		FINISH			
HOLES ± .001		OWN.		DATE		SCALE		PART NO.	
ANGLES ± 1/2°		AAN		2-18-82		382-17-0100		REV.	
SHT. MET. THREADS ± .001									



								QC. APV'D				PROD. APV'D				QTY.				ASSEMBLY NO.															
																HIALEAH, FLORIDA 33014																			
								TOLERANCES Unless Otherwise Specified				NAME COMPLETE GAME LESS PKG																							
								FRACTIONS + 1/32 DECIMALS 2 PL + 015 DECIMALS 3 PL + 005 HOLES + 003 + 001				MAT'L'S				HEAT TREAT.				FINISH															
REV. LET.				ECN NO.				REVISION				BY				ANGLES 1/2" SST. NET RENDS				DATE JAN 18 1980				SCALE 3/2" = 1"				PART NO. 372-01-0200				REV.			